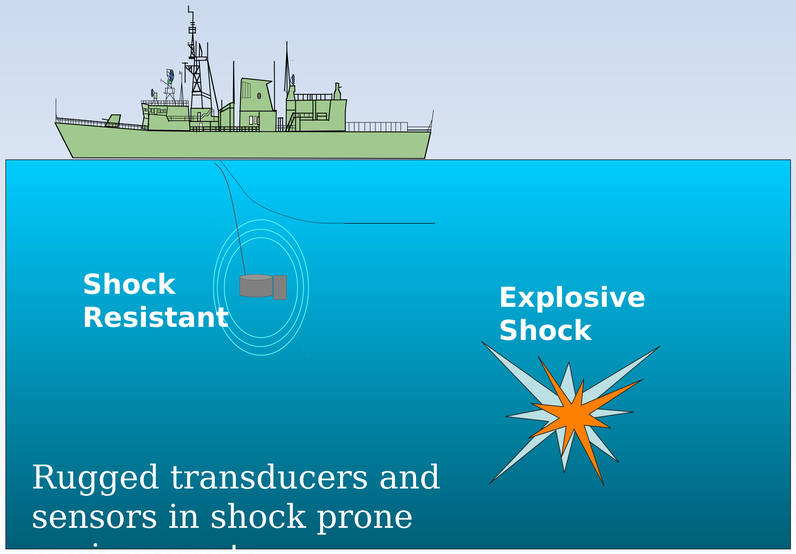
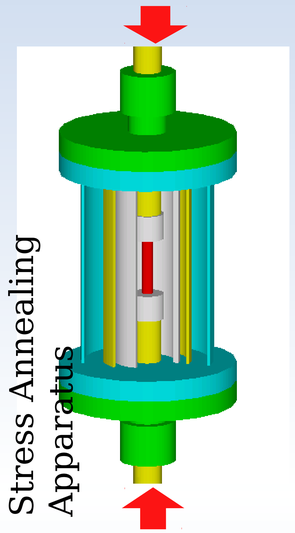
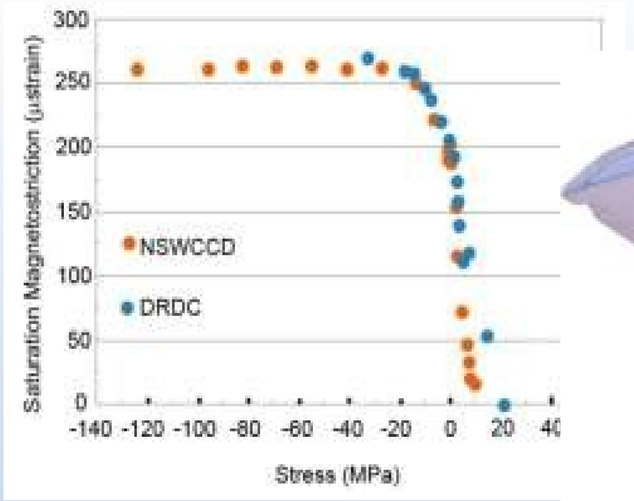
Measurement Techniques for the Characterization of Magnetostrictive and Magnetic Shape Memory Materials

MAT TP-1, Metals and Ceramics Technology and Performance







Round Robin Magnetostriction Measurements

Interrogator device to wirelessly power Distributed Sensor Networks by RF transmission for Structural Health Monitoring

Program Name: Measurement Techniques for Characterisation of Magnetostrictive and Magnetic Shape Memory Materials

Objective: To understand the potential and limitations of magnetostrictive and magnetic shape memory alloys for defense applications, to recommend the best practices and to lay the groundwork for developing future standards.

Payoff: This collaborative work enabled greatly accelerated development and exploitation of novel magnetostrictive and magnetic shape alloy technologies, and laid the groundwork for developing international acceptance standards, which are keys to the implementation of these technologies into military applications. A variety of prototype devices and novel applications are already in development, and are anticipated to contribute significantly to future substantial enhancement of military capabilities of the TTCP member nations.

Participants: DSTO DRDC DSTL NSWC

Future Activities: Follow-on operating assignment to support device development by quantifying magneto-mechanical properties required for specific device design, optimization and modelling

This award is made for significant advances the development and exploitation of novel magnetostrictive and magnetic shape alloy technologies for defence applications, thereby laying the groundwork for developing international acceptance standards and contributing to future substantial enhancement of military capabilities of the TTCP member nations.